

## Appendices

Appendix A: Emission Trends

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## Appendix A: Emission Trends

TABLE 10 EMISSION TRENDS

CO<sub>2</sub>

(Part 1 of 3)

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990) (Gg)	1991	1992	1993	1994	1995	1996	1997	1998	1999
		(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
<b>1. Energy</b>	<b>4,911,976.68</b>	<b>4,872,772.30</b>	<b>4,976,659.13</b>	<b>5,089,990.69</b>	<b>5,170,741.85</b>	<b>5,226,111.72</b>	<b>5,412,334.61</b>	<b>5,484,245.98</b>	<b>5,525,875.69</b>	<b>5,601,482.77</b>
A. Fuel Combustion (Sectoral Approach)	4,834,499.06	4,834,499.06	4,938,526.88	5,048,656.81	5,129,366.13	5,183,184.46	5,371,912.32	5,444,270.86	5,495,895.63	5,570,473.87
1. Energy Industries	1,820,817.12	1,818,191.70	1,831,538.76	1,906,903.88	1,931,238.84	1,947,924.74	2,020,993.05	2,088,398.69	2,177,387.99	2,190,523.00
2. Manufacturing Industries and Construction	848,555.99	828,273.81	859,446.33	858,303.65	866,789.18	870,390.21	906,648.20	907,138.15	868,801.78	844,615.05
3. Transport	1,445,418.12	1,401,573.35	1,463,597.87	1,499,200.33	1,543,917.64	1,577,349.60	1,621,928.25	1,638,364.16	1,674,047.93	1,730,141.07
4. Other Sectors	557,309.28	571,993.32	574,119.16	585,859.54	579,027.15	578,216.84	617,416.71	598,167.15	546,978.38	569,130.78
5. Other	201,817.51	214,466.87	209,824.76	198,389.41	208,393.33	208,303.06	204,926.12	212,182.71	228,679.54	236,063.98
B. Fugitive Emissions from Fuels	38,038.66	38,273.24	37,992.25	41,333.89	41,375.71	42,927.26	40,422.28	39,975.12	29,980.04	31,008.90
1. Solid Fuels	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO
2. Oil and Natural Gas	38,038.66	38,273.24	37,992.25	41,333.89	41,375.71	42,927.26	40,422.28	39,975.12	29,980.04	31,008.90
<b>2. Industrial Processes</b>	<b>188,772.28</b>	<b>172,814.47</b>	<b>180,398.17</b>	<b>177,974.37</b>	<b>183,846.08</b>	<b>190,043.98</b>	<b>190,110.57</b>	<b>193,600.11</b>	<b>189,884.98</b>	<b>187,404.24</b>
A. Mineral Products	540,906.69	52,404.62	53,112.52	54,947.18	57,390.83	60,444.12	61,873.96	62,914.07	64,348.48	65,310.46
B. Chemical Industry	24,774.71	24,610.50	23,905.75	26,167.76	27,364.96	26,832.24	26,818.70	27,664.43	28,695.84	27,270.83
C. Metal Production	109,911.89	100,799.35	101,379.89	96,799.43	99,090.28	102,167.62	101,417.90	102,981.61	96,840.66	94,822.95
D. Other Production	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
E. Production of Halocarbons and SF <sub>6</sub>	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
F. Consumption of Halocarbons and SF <sub>6</sub>	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
G. Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
<b>3. Solvent and Other Product Use</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>
A. Other	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
<b>4. Agriculture</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>
A. Enteric Fermentation	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
B. Manure Management	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
C. Rice Cultivation	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
D. Agricultural Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
E. Prescribed Burning of Savannas	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
F. Field Burning of Agricultural Residues	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
G. Other	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
<b>5. Land Use, Land-Use Change and Forestry<sup>a)</sup></b>	<b>-786,411.70</b>	<b>-791,029.77</b>	<b>-776,901.37</b>	<b>-776,683.37</b>	<b>-825,292.74</b>	<b>-789,363.62</b>	<b>-818,112.84</b>	<b>-781,566.48</b>	<b>-720,426.70</b>	<b>-651,622.02</b>
A. Forest Land	-565,032.14	-564,307.51	-558,757.27	-564,024.58	-587,063.90	-597,104.53	-608,292.76	-570,477.04	-517,297.45	-448,056.65
B. Cropland	-5,985.06	-16,909.84	-7,639.18	-10,023.61	-20,435.67	-2,168.90	-5,248.04	-7,146.33	-1,296.97	-2,303.32
C. Grassland	-12,948.83	-17,019.71	-16,557.72	-13,367.45	-27,733.65	-11,327.25	-27,705.00	-19,540.19	-20,244.47	-14,002.29
D. Wetlands	1,033.48	962.28	919.35	980.38	937.87	1,017.94	872.25	1,037.48	1,084.22	1,154.91
E. Settlements	-47,495.77	-48,589.18	-49,682.89	-50,716.60	-51,870.31	-52,964.02	-55,057.73	-55,151.44	-56,245.15	-57,338.86
F. Other Land	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
G. Other	-155,963.69	-145,265.81	-139,471.70	-139,471.70	-139,127.09	-132,218.67	-123,681.56	-129,688.95	-126,426.89	-130,675.83
<b>6. Waste</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>	<b>IE,NA,NE</b>
A. Solid Waste Disposal on Land	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
B. Waste-water Handling	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
C. Waste Incineration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>7. Other (as specified in Summary L4)</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>Total CO<sub>2</sub> emissions including net CO<sub>2</sub> from LULUCF</b>	<b>4,314,282.25</b>	<b>4,259,457.00</b>	<b>4,380,015.92</b>	<b>4,491,221.69</b>	<b>4,529,295.18</b>	<b>4,636,292.07</b>	<b>4,784,332.33</b>	<b>4,896,039.61</b>	<b>4,995,333.97</b>	<b>5,137,264.98</b>
<b>Total CO<sub>2</sub> emissions excluding net CO<sub>2</sub> from LULUCF</b>	<b>5,100,693.96</b>	<b>5,050,586.77</b>	<b>5,156,917.29</b>	<b>5,267,505.06</b>	<b>5,354,587.92</b>	<b>5,416,155.70</b>	<b>5,602,445.17</b>	<b>5,677,606.09</b>	<b>5,715,760.67</b>	<b>5,788,887.01</b>
<b>Memo Items:</b>										
<b>International Bankers</b>	<b>103,462.57</b>	<b>117,569.49</b>	<b>107,862.97</b>	<b>97,829.15</b>	<b>96,689.41</b>	<b>98,091.64</b>	<b>99,749.73</b>	<b>106,960.91</b>	<b>110,490.71</b>	<b>102,333.04</b>
Aviation	38,033.60	46,339.14	46,769.35	46,889.85	48,342.47	49,003.00	51,029.10	54,885.17	54,080.46	57,557.15
Marine	65,428.97	71,230.35	61,093.62	50,939.30	48,346.94	48,888.64	48,720.63	52,075.74	56,410.25	45,775.90
<b>Multilateral Operations</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>218,636.81</b>	<b>219,424.05</b>	<b>229,781.83</b>	<b>224,870.28</b>	<b>231,324.16</b>	<b>236,105.48</b>	<b>240,451.49</b>	<b>234,633.36</b>	<b>217,304.31</b>	<b>220,560.72</b>

Note: All footnotes for this table are given at the end of the table on sheet 5.

TABLE 10 EMISSION TRENDS  
CO<sub>2</sub>  
(Part 2 of 3)

Inventory 2011  
Submission 2013 v.1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
<b>1. Energy</b>	5,777,296.33	5,695,045.39	5,736,040.05	5,789,216.83	5,902,457.08	5,934,056.22	5,853,547.56	5,946,413.61	5,774,919.28	5,390,590.53										
A. Fuel Combustion (Sectoral Approach)	5,747,185.88	5,665,482.42	5,705,046.94	5,760,046.39	5,873,577.83	5,903,827.51	5,823,193.81	5,915,251.43	5,741,997.16	5,358,083.23										
1. Energy Industries	2,296,890.10	2,257,925.58	2,272,680.88	2,304,694.42	2,337,043.46	2,402,142.06	2,346,406.47	2,412,826.38	2,360,919.64	2,146,415.03										
2. Manufacturing Industries and Construction	844,268.07	837,047.12	824,031.80	822,784.48	846,630.03	873,088.24	848,133.70	844,420.34	802,039.69	772,627.08										
3. Transport	1,755,023.92	1,759,576.67	1,802,183.86	1,793,353.31	1,839,740.92	1,864,177.09	1,866,595.77	1,879,300.88	1,790,964.97	1,726,751.85										
4. Other Sectors	601,487.60	586,885.75	584,713.51	613,392.81	602,363.05	581,411.81	530,091.37	560,523.05	570,720.39	560,392.34										
5. Other	229,516.18	224,044.30	222,084.78	225,946.36	217,799.90	232,688.31	231,966.50	218,180.48	217,352.47	201,896.93										
B. Fugitive Emissions from Fuels	30,111.05	29,562.96	30,345.21	29,170.44	28,879.84	30,228.71	30,353.76	31,162.18	32,922.12	32,507.31										
1. Solid Fuels	30,111.05	29,562.96	30,345.21	29,170.44	28,879.84	30,228.71	30,353.76	31,162.18	32,922.12	32,507.31										
2. Oil and Natural Gas	185,404.56	167,795.45	167,352.75	162,296.03	167,867.98	166,346.91	170,567.12	172,904.22	160,264.44	119,010.83										
A. Mineral Products	63,673.15	63,022.08	64,894.72	64,236.63	69,396.86	73,069.12	70,346.96	70,554.35	65,245.87	51,378.21										
B. Chemical Industry	25,844.70	21,597.44	22,945.80	21,397.67	22,591.98	21,816.66	21,851.12	23,283.67	20,415.81	18,657.03										
C. Metal Production	95,886.71	83,175.93	79,512.23	76,641.72	75,879.15	73,783.29	76,312.88	78,666.19	74,602.77	48,975.59										
D. Other Production	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE										
E. Production of Halocarbons and SF <sub>6</sub>																				
F. Consumption of Halocarbons and SF <sub>6</sub>																				
G. Other																				
<b>3. Solvent and Other Product Use</b>																				
A. Enteric Fermentation																				
B. Manure Management																				
C. Rice Cultivation																				
D. Agricultural Soils																				
E. Prescribed Burning of Savannas																				
F. Field Burning of Agricultural Residues																				
G. Other																				
<b>5. Land Use, Land-Use Change and Forestry<sup>2b</sup></b>	473,003.43	779,428.52	450,533.24	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76	949,294.76
A. Forest Land	-431,111.76	-553,467.36	-679,349.21	-791,020.11	-817,448.71	-799,624.91	-764,068.13	-757,052.84	-757,052.84	-757,052.84										
B. Cropland	-11,157.97	6,979.89	20,948.07	22,769.56	14,106.08	1,055.40	17,899.21	16,127.35	17,974.03	17,163.32										
C. Grassland	-47,433.73	-18,554.93	-22,414.32	-15,212.38	-11,208.67	-11,248.52	-24,831.23	-1,884.33	-1,768.53	-1,651.68										
D. Wetlands	1,227.28	1,140.27	1,000.95	983.07	1,078.94	1,078.91	878.94	1,011.63	992.14	1,088.63										
E. Settlements	-58,432.27	-59,377.38	-60,322.19	-61,267.00	-62,211.82	-63,156.63	-64,101.44	-65,046.25	-65,991.06	-66,935.87										
F. Other Land		NE	NE	NE	NE	NE	NE	NE	NE	NE										
G. Other	-126,094.08	-106,449.02	-110,396.53	-105,447.89	-115,804.60	-116,999.40	-118,825.23	-113,441.62	-87,128.89	-66,911.96										
<b>6. Waste</b>																				
A. Solid Waste Disposal on Land																				
B. Wastewater Handling																				
C. Waste Incineration																				
D. Other																				
<b>7. Other (as specified in Summary 1.4)</b>																				
Total CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	5,289,698.06	5,133,412.32	5,052,859.56	5,002,218.10	5,078,835.02	5,111,507.97	5,071,060.80	5,199,349.19	5,042,208.58	4,635,300.96										
Total CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	5,962,701.49	5,862,540.84	5,903,392.80	5,951,512.86	6,070,325.66	6,100,403.13	6,024,114.68	6,119,317.83	5,935,183.73	5,509,601.36										
<b>Memo Items:</b>																				
International Bankers	101,726.18	93,731.32	94,442.98	98,409.91	108,391.00	113,193.25	114,115.98	115,345.34	114,341.85	106,410.32										
Aviation	62,029.31	56,384.52	54,626.24	55,196.36	56,239.23	60,125.45	60,283.69	61,489.49	56,145.71	52,785.00										
Marine	39,696.86	37,346.80	39,816.74	43,113.55	52,151.77	53,013.80	53,832.30	53,855.85	58,196.14	53,625.32										
Multilateral Operations																				
CO <sub>2</sub> Emissions from Biomass	226,555.50	202,498.82	203,559.77	208,724.36	224,089.19	228,651.10	232,668.86	238,307.61	251,734.38	245,057.03										

Note: All footnotes for this table are given at the end of the table on sheet 5.

**TABLE 10 EMISSION TRENDS**  
**CO<sub>2</sub>**  
**(Part 3 of 3)**

Inventory 2011  
 Submission 2013 v1.1  
 UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2010		2011		Change from base to latest reported year
	(Gg)	%	(Gg)	%	
<b>1. Energy</b>	<b>5,585,641.74</b>	<b>5,452,528.41</b>	<b>5,419,837.29</b>	<b>11.20</b>	<b>11.00</b>
A. Fuel Combustion (Sectoral Approach)	5,552,996.00	2,158,510.32	5,419,837.29	18.55	18.55
1. Energy Industries	2,259,189.96	773,192.26	2,158,510.32	-8.88	-8.88
2. Manufacturing Industries and Construction	780,239.67	1,775,577.55	773,192.26	19.38	19.38
3. Transport	1,743,149.61	550,857.14	1,775,577.55	-1.16	-1.16
4. Other Sectors	555,204.37	211,700.02	550,857.14	4.90	4.90
5. Other	216,212.39	32,691.12	211,700.02	-14.10	-14.10
B. Fugitive Emissions from Fuels	32,645.75	IE,NE,NO	32,691.12	0.00	0.00
1. Solid Fuels	32,645.75	32,691.12	32,691.12	-14.10	-14.10
2. Oil and Natural Gas	141,396.86	151,292.18	151,292.18	-19.83	-19.83
<b>2. Industrial Processes</b>	<b>57,806.43</b>	<b>58,590.21</b>	<b>58,590.21</b>	<b>8.44</b>	<b>8.44</b>
A. Mineral Products	21,736.70	21,664.69	21,664.69	-12.55	-12.55
B. Chemical Industry	61,853.72	71,037.27	71,037.27	-35.37	-35.37
C. Metal Production	NE	NE	NE	0.00	0.00
D. Other Production	NE	NE	NE	0.00	0.00
E. Production of Halocarbons and SF <sub>6</sub>	NE	NE	NE	0.00	0.00
F. Consumption of Halocarbons and SF <sub>6</sub>	NE	NE	NE	0.00	0.00
G. Other	NE	NE	NE	0.00	0.00
<b>3. Solvent and Other Product Use</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>NA,NO</b>	<b>0.00</b>	<b>0.00</b>
<b>4. Agriculture</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>NA,NE</b>	<b>0.00</b>	<b>0.00</b>
A. Enteric Fermentation	NA,NE	NA,NE	NA,NE	0.00	0.00
B. Manure Management	NA,NE	NA,NE	NA,NE	0.00	0.00
C. Rice Cultivation	NA,NE	NA,NE	NA,NE	0.00	0.00
D. Agricultural Soils	NA,NE	NA,NE	NA,NE	0.00	0.00
E. Prescribed Burning of Savannas	NA,NE	NA,NE	NA,NE	0.00	0.00
F. Field Burning of Agricultural Residues	NA,NE	NA,NE	NA,NE	0.00	0.00
G. Other	NA,NE	NA,NE	NA,NE	0.00	0.00
<b>5. Land Use, Land-Use Change, and Forestry<sup>(b)</sup></b>	<b>-579,410.48</b>	<b>-896,007.06</b>	<b>-761,804.08</b>	<b>13.94</b>	<b>13.94</b>
A. Forest Land	-758,184.94	-761,804.08	-761,804.08	34.82	34.82
B. Cropland	19,884.34	19,765.20	19,765.20	-430.24	-430.24
C. Grassland	-1,502.25	-1,354.10	-1,354.10	-89.54	-89.54
D. Wetlands	1,009.91	917.70	917.70	-11.20	-11.20
E. Settlements	-67,880.69	-68,825.50	-68,825.50	44.91	44.91

TABLE 10 EMISSION TRENDS  
CH<sub>4</sub>  
(Part 1 of 3)

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990) (Gg)	1991 (Gg)	1992 (Gg)	1993 (Gg)	1994 (Gg)	1995 (Gg)	1996 (Gg)	1997 (Gg)	1998 (Gg)	1999 (Gg)
<b>1. Energy</b>	14,219.52	14,148.50	13,971.66	13,558.34	13,663.08	13,452.42	13,572.07	13,580.26	13,212.73	12,867.55
A. Fuel Combustion (Sectoral Approach)	573.69	575.41	588.06	562.63	549.98	540.33	545.98	504.48	468.42	463.49
1. Energy Industries	15.77	15.75	15.86	16.54	16.87	17.02	17.47	18.08	19.27	19.42
2. Manufacturing Industries and Construction	85.56	83.47	86.05	87.11	90.66	91.58	93.51	95.22	90.33	89.62
3. Transport	207.57	201.91	201.03	197.98	193.94	187.48	178.86	170.52	162.22	150.83
4. Other Sectors	262.03	271.36	282.15	255.04	245.41	241.83	233.44	217.50	193.75	200.75
5. Other	2.76	2.91	2.97	2.97	3.09	2.82	2.70	2.85	2.87	2.89
B. Fugitive Emissions from Fuels	13,645.82	13,572.09	13,383.59	12,995.70	13,113.10	12,911.69	13,026.09	13,075.77	12,744.51	12,404.06
1. Solid Fuels	4,290.85	4,155.70	4,077.32	3,551.44	3,651.23	3,585.27	3,583.39	3,521.73	3,508.75	3,328.70
2. Oil and Natural Gas	9,354.98	9,417.39	9,306.27	9,444.27	9,461.87	9,326.41	9,442.70	9,554.04	9,235.56	9,075.36
<b>2. Industrial Processes</b>	155.63	160.01	165.08	169.19	179.65	187.71	192.89	199.45	201.13	208.64
A. Mineral Products	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Chemical Industry	109.40	118.96	121.03	124.40	133.76	140.43	146.96	153.36	156.34	165.60
C. Metal Production	46.24	41.04	44.05	44.79	45.90	47.28	45.93	46.09	44.80	43.04
D. Other Production										
E. Production of Halocarbons and SF <sub>6</sub>										
F. Consumption of Halocarbons and SF <sub>6</sub>										
G. Other	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
<b>3. Solvent and Other Product Use</b>										
<b>4. Agriculture</b>	8,168.68	8,242.82	8,436.47	8,548.25	8,832.44	9,012.37	8,909.17	8,887.03	8,998.06	9,044.59
A. Enteric Fermentation	6,320.86	6,333.24	6,540.08	6,621.59	6,741.35	6,896.84	6,832.70	6,721.20	6,652.64	6,652.64
B. Manure Management	1,498.82	1,567.79	1,511.61	1,583.25	1,689.78	1,743.42	1,715.17	1,799.34	1,962.08	1,986.67
C. Rice Cultivation	339.21	333.19	374.79	334.24	391.13	362.90	331.25	356.24	376.26	394.87
D. Agricultural Soils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	9.78	8.61	9.99	9.17	10.18	9.22	9.56	10.25	10.58	10.40
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>5. Land Use, Land-Use Change and Forestry</b>	118.37	103.50	154.56	96.28	285.72	160.34	455.04	90.14	120.87	428.88
A. Forest Land	118.37	103.50	154.56	96.28	285.72	160.34	455.04	90.14	120.87	428.88
B. Cropland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C. Grassland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Wetlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Settlements	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Other Land	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>6. Waste</b>	7,810.46	7,870.33	7,918.24	7,878.41	7,820.60	7,484.08	7,321.62	6,915.28	6,569.63	6,355.75
A. Solid Waste Disposal on Land	7,037.07	7,083.45	7,110.88	7,065.09	6,988.68	6,643.42	6,476.41	6,054.10	5,703.75	5,478.19
B. Waste-water Handling	758.15	769.46	787.76	788.28	801.15	805.82	805.63	817.38	818.20	824.15
C. Waste Incineration	IE, NE	IE, NE	IE, NE	IE, NE	IE, NE	IE, NE	IE, NE	IE, NE	IE, NE	IE, NE
D. Other	15.24	17.42	19.60	25.04	30.77	34.84	39.59	43.80	47.68	53.42
<b>7. Other (as specified in Summary L4)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CH<sub>4</sub> emissions including CH<sub>4</sub> from LULUCF</b>	30,472.66	30,525.16	30,646.02	30,259.46	30,781.48	30,206.92	30,450.80	29,672.15	29,102.43	28,905.42
<b>Total CH<sub>4</sub> emissions excluding CH<sub>4</sub> from LULUCF</b>	30,354.28	30,421.66	30,491.46	30,154.19	30,495.77	30,136.58	29,995.56	29,582.01	28,981.56	28,776.54
<b>Memo Items:</b>										
<b>International Bankers</b>										
Aviation	6.53	7.11	6.10	5.08	4.82	4.85	4.86	5.24	5.63	4.51
Marine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Multilateral Operations</b>										
CO <sub>2</sub> Emissions from Biomass	6.53	7.11	6.10	5.08	4.82	4.85	4.86	5.24	5.63	4.51
IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE

Note: All footnotes for this table are given at the end of the table on sheet 5.

TABLE 10 EMISSION TRENDS  
CH<sub>4</sub>  
(Part 2 of 3)

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
<b>1. Energy</b>	13,068.78	13,153.53	12,735.36	12,801.27	12,639.94	12,364.71	12,852.31	12,852.66	13,066.72	12,610.43
A. Fuel Combustion (Sectoral Approach)	468.60	443.90	429.71	432.24	431.63	428.47	399.91	404.35	405.00	385.59
1. Energy Industries	20.46	20.34	20.55	21.14	21.14	22.02	21.72	22.66	22.13	20.67
2. Manufacturing Industries and Construction	89.64	85.33	83.34	83.20	85.33	87.79	88.69	85.76	81.26	73.81
3. Transport	142.26	138.17	121.38	111.82	105.41	98.17	88.42	84.42	77.13	72.15
4. Other Sectors	213.41	196.53	201.23	212.89	212.58	191.71	194.17	208.22	221.50	215.61
5. Other	2.83	3.53	3.21	3.68	3.89	3.67	3.59	3.29	3.99	3.15
B. Fugitive Emissions from Fuels	12,600.18	12,709.62	12,305.65	12,369.03	12,208.32	11,936.25	12,452.40	12,448.31	12,661.72	12,225.04
1. Solid Fuels	3,227.05	3,195.35	2,998.34	2,993.23	3,041.32	2,973.49	3,034.31	3,009.45	3,448.93	3,592.13
2. Oil and Natural Gas	9,373.13	9,514.28	9,307.31	9,375.80	9,166.99	8,962.75	9,418.09	9,438.86	9,212.79	8,632.91
<b>2. Industrial Processes</b>	207.94	186.43	191.48	187.02	206.14	184.45	188.45	189.39	169.15	155.96
A. Mineral Products	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Chemical Industry	163.55	147.46	151.26	149.46	166.13	149.98	153.42	155.66	137.88	138.18
C. Metal Production	44.39	38.98	37.22	37.56	39.01	34.46	35.03	33.63	31.27	17.78
D. Other Production										
E. Production of Halocarbons and SF <sub>6</sub>										
F. Consumption of Halocarbons and SF <sub>6</sub>										
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>3. Solvent and Other Product Use</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>4. Agriculture</b>	8,958.33	9,013.04	9,942.54	9,892.03	8,944.38	9,126.61	9,211.39	9,549.52	9,536.99	9,455.65
A. Enteric Fermentation	6,578.49	6,540.42	6,551.79	6,563.92	6,440.03	6,521.73	6,631.12	6,751.21	6,731.43	6,693.01
B. Manure Management	2,012.78	2,098.87	2,156.31	2,187.96	2,134.59	2,264.89	2,287.72	2,493.05	2,452.15	2,402.82
C. Rice Cultivation	356.84	363.78	325.20	328.37	360.22	326.10	281.97	294.56	342.73	349.06
D. Agricultural Soils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Prescribed Burning of Soils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	10.22	9.97	9.24	11.79	9.54	7.89	10.58	10.70	10.67	10.74
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>5. Land Use, Land-Use Change and Forestry</b>	544.45	320.46	484.43	312.20	177.96	382.55	843.33	683.82	412.64	271.48
A. Forest Land	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Cropland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C. Grassland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Wetlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Settlements	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Other Land	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>6. Waste</b>	6,217.01	5,994.52	6,037.95	6,293.84	6,108.99	6,216.65	6,179.92	6,183.23	6,280.18	6,257.81
A. Solid Waste Disposal on Land	5,336.76	5,132.72	5,176.99	5,430.09	5,237.73	5,357.07	5,310.99	5,313.86	5,408.68	5,396.69
B. Waste-water Handling	820.56	801.74	800.21	793.51	794.98	785.01	793.52	790.40	791.31	785.91
C. Waste Incineration	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
D. Other	59.69	60.06	60.75	69.24	74.28	74.57	75.41	78.78	80.20	75.20
<b>7. Other (as specified in Summary L4)</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total CH<sub>4</sub> emissions including CH<sub>4</sub> from LULUCF</b>	28,996.52	28,667.99	28,491.75	28,685.36	28,076.42	28,268.97	29,275.40	29,458.53	29,465.09	28,751.31
<b>Total CH<sub>4</sub> emissions excluding CH<sub>4</sub> from LULUCF</b>	28,452.08	28,347.53	28,007.32	28,373.16	27,898.45	27,886.41	28,432.08	28,774.71	29,053.05	28,479.83
<b>Memo Items:</b>										
International Bankers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aviation	3.96	3.73	3.98	4.31	5.21	5.29	5.38	5.38	5.81	5.36
Marine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Multilateral Operations	3.96	3.73	3.98	4.31	5.21	5.29	5.38	5.38	5.81	5.36
CO <sub>2</sub> Emissions from Biomass	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE

Note: All footnotes for this table are given at the end of the table on sheet 5.

TABLE 10 EMISSION TRENDS  
CH<sub>4</sub>  
(Part 3 of 3)

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2010 (Gg)	2011 (Gg)	Change from base to latest reported year %
<b>1. Energy</b>	12,375.39	12,015.78	-15.50
A. Fuel Combustion (Sectoral Approach)	386.00	382.05	-33.41
1. Energy Industries	21.85	21.24	34.65
2. Manufacturing Industries and Construction	70.52	78.83	-2.87
3. Transport	69.10	66.26	-46.08
4. Other Sectors	211.91	212.19	-19.02
5. Other	3.62	3.53	27.62
B. Fugitive Emissions from Fuels	11,989.39	11,633.73	-14.75
1. Solid Fuels	3,684.25	3,242.22	-24.44
2. Oil and Natural Gas	8,305.14	8,391.51	-10.30
<b>2. Industrial Processes</b>	171.59	176.96	13.70
A. Mineral Products	NA	NA	0.00
B. Chemical Industry	146.61	148.89	36.10
C. Metal Production	24.98	28.08	-39.28
D. Other Production			
E. Production of Halocarbons and SF <sub>6</sub>			
F. Consumption of Halocarbons and SF <sub>6</sub>			
G. Other	NA, NO	NA, NO	0.00
<b>3. Solvent and Other Product Use</b>	NA, NO	NA, NO	0.00
<b>4. Agriculture</b>	9,519.01	9,345.30	14.40
A. Enteric Fermentation	6,632.37	6,541.59	3.49
B. Manure Management	2,466.09	2,478.01	65.33
C. Rice Cultivation	409.73	315.96	-6.86
D. Agricultural Soils	NA	NA	0.00
E. Prescribed Burning of Savannas	NA	NA	0.00
F. Field Burning of Agricultural Residues	NA	NA	0.00
G. Other	10.82	9.74	-4.46
<b>5. Land Use, Land-Use Change and Forestry</b>	222.33	674.85	470.12
A. Forest Land	222.33	674.85	470.12
B. Cropland	NA	NA	0.00
C. Grassland	NA	NA	0.00
D. Wetlands	NE	NE	0.00
E. Settlements	NE	NE	0.00
F. Other Land	NE	NE	0.00

TABLE 10 EMISSION TRENDS

N<sub>2</sub>O

(Part 1 of 3)

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ( 1990 )										1997	1998	1999
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
<b>1. Energy</b>	183.10	188.97	199.76	207.13	213.56	217.34	220.93	223.84	222.53	219.34	219.34	219.34	219.34
A. Fuel Combustion (Sectoral Approach)	183.10	188.97	199.76	207.13	213.56	217.34	220.93	223.84	222.53	219.34	219.34	219.34	219.34
1. Energy Industries	23.72	23.72	23.90	24.91	25.41	25.64	26.52	26.82	28.01	28.01	28.01	28.01	28.01
2. Manufacturing Industries and Construction	13.89	13.88	14.01	14.15	14.70	14.81	15.16	15.42	14.72	14.64	14.64	14.64	14.64
3. Transport	137.37	143.72	153.84	160.50	166.08	170.51	172.01	173.80	173.56	169.77	169.77	169.77	169.77
4. Other Sectors	4.87	5.02	5.11	4.77	4.59	4.51	4.77	4.23	3.78	3.95	3.95	3.95	3.95
5. Other	3.20	2.93	2.91	2.80	2.78	2.72	2.68	2.57	2.47	2.38	2.38	2.38	2.38
B. Fugitive Emissions from Fuels	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE
1. Solid Fuels	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE
2. Oil and Natural Gas	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE	IE/NA/NE
<b>2. Industrial Processes</b>	109.54	108.49	108.63	107.60	109.80	121.90	124.04	107.34	85.81	81.87	81.87	81.87	81.87
A. Mineral Products	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Chemical Industry	109.54	108.49	103.63	107.60	109.80	121.90	124.04	107.34	85.81	81.87	81.87	81.87	81.87
C. Metal Production	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other Production	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Production of Halocarbons and SF <sub>6</sub>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Consumption of Halocarbons and SF <sub>6</sub>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G. Other	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO	NA/NO
<b>3. Solvent and Other Product Use</b>	14.21	13.81	13.02	14.80	14.80	14.80	14.80	15.74	15.74	15.74	15.74	15.74	15.74
A. Mineral Products	781.67	806.82	816.64	937.09	844.85	871.75	906.60	891.28	830.77	832.29	832.29	832.29	832.29
B. Manure Management	46.32	47.07	47.21	46.53	48.96	50.24	50.05	50.68	51.44	53.44	53.44	53.44	53.44
C. Rice Cultivation	735.09	758.52	769.16	890.31	795.61	821.25	856.28	840.31	779.03	778.56	778.56	778.56	778.56
D. Agricultural Soils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Prescribed Burning of Savannas	0.26	0.24	0.27	0.25	0.29	0.26	0.27	0.29	0.29	0.29	0.29	0.29	0.29
F. Field Burning of Agricultural Residues	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G. Other	9.93	9.19	12.32	9.78	20.53	13.29	29.59	9.46	10.58	27.84	27.84	27.84	27.84
<b>5. Land Use, Land-Use Change and Forestry</b>	6.76	5.93	8.84	5.75	16.23	9.51	26.09	5.99	7.80	25.25	25.25	25.25	25.25
A. Forest Land	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE
B. Cropland	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE
C. Grassland	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE	IE/NE
D. Wetlands	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02
E. Settlements	3.16	3.25	3.46	4.01	4.28	3.76	3.48	3.46	2.77	2.58	2.58	2.58	2.58
F. Other Land	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
G. Other	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO	IE/NA/NO
<b>6. Waste</b>	12.30	12.71	13.29	13.87	14.59	14.93	15.55	15.90	16.56	17.50	17.50	17.50	17.50
A. Solid Waste Disposal on Land	11.16	11.41	11.82	12.00	12.28	12.31	12.58	12.62	12.98	13.49	13.49	13.49	13.49
B. Waste-water Handling	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
C. Waste Incineration	1.14	1.31	1.47	1.88	2.31	2.61	2.97	3.28	3.58	4.01	4.01	4.01	4.01
D. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>7. Other (as specified in Summary L4)</b>	1,110.75	1,139.00	1,158.67	1,290.26	1,218.13	1,254.00	1,311.51	1,256.56	1,181.99	1,194.58	1,194.58	1,194.58	1,194.58
Total N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	1,100.82	1,129.81	1,146.35	1,280.48	1,197.60	1,240.71	1,281.92	1,247.09	1,171.41	1,166.74	1,166.74	1,166.74	1,166.74
Total N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Memo Items:</b>	4.06	4.26	4.06	3.79	3.90	3.75	3.97	4.04	4.29	3.87	3.87	3.87	3.87
International Bankers	2.41	2.46	2.51	2.50	2.67	2.52	2.74	2.71	2.86	2.72	2.72	2.72	2.72
Aviation	1.66	1.81	1.55	1.29	1.22	1.23	1.23	1.33	1.43	1.14	1.14	1.14	1.14
Marine	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Multilateral Operations	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
CO <sub>2</sub> Emissions from Biomass	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: All footnotes for this table are given at the end of the table on sheet 5.



TABLE 10 EMISSION TRENDS  
N<sub>2</sub>O  
(Part 2 of 3)

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
<b>1. Energy</b>	218.94	211.01	203.69	196.45	193.47	186.78	177.11	163.17	151.36	141.18
A. Fuel Combustion (Sectoral Approach)	218.94	211.01	203.69	196.45	193.47	186.78	177.11	163.17	151.36	141.18
1. Energy Industries	31.04	32.79	38.70	42.61	47.55	51.60	53.90	53.90	54.27	54.21
2. Manufacturing Industries and Construction	14.66	14.39	14.13	14.22	14.95	14.91	15.26	14.81	14.12	13.05
3. Transport	166.60	157.30	144.42	132.79	124.06	113.52	103.37	88.14	76.58	67.69
4. Other Sectors	4.20	4.00	3.97	4.23	4.26	4.24	3.78	3.99	4.15	4.05
5. Other	2.44	2.54	2.47	2.59	2.64	2.51	2.40	2.33	2.24	2.18
B. Fugitive Emissions from Fuels	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE
1. Solid Fuels	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE
2. Oil and Natural Gas	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE
<b>2. Industrial Processes</b>	81.92	67.17	73.04	71.37	65.01	76.58	82.21	98.13	62.72	54.23
A. Mineral Products	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Chemical Industry	81.92	67.17	73.04	71.37	65.01	76.58	82.21	98.13	62.72	54.23
C. Metal Production	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Other Production										
E. Production of Halocarbons and SF <sub>6</sub>										
F. Consumption of Halocarbons and SF <sub>6</sub>										
<b>3. Solvent and Other Product Use</b>	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
G. Other	15.74	15.74	14.15	14.15	14.15	14.15	14.15	14.15	14.15	14.15
<b>4. Agriculture</b>	787.26	820.57	832.21	810.24	856.38	821.47	842.52	872.13	849.38	840.72
A. Enteric Fermentation	54.85	54.50	55.71	56.16	54.10	55.08	57.60	57.96	57.31	57.13
B. Manure Management	732.13	765.78	776.24	753.78	802.01	766.14	784.62	813.84	791.76	783.27
C. Rice Cultivation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Agricultural Soils	0.29	0.29	0.27	0.31	0.27	0.25	0.30	0.33	0.30	0.31
E. Prescribed Burning of Savannas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F. Field Burning of Agricultural Residues	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G. Other	35.12	23.46	32.66	33.28	16.00	27.08	52.65	44.06	28.71	30.70
<b>5. Land Use, Land-Use Change and Forestry</b>	18.35	18.85	18.71	19.53	20.25	20.62	20.99	21.49	21.81	21.64
A. Forest Land	31.43	19.04	28.21	18.60	11.00	22.32	47.81	38.98	23.98	16.17
B. Cropland	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE
C. Grassland	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE	IE,NE
D. Wetlands	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02
E. Settlements	3.66	4.40	4.43	4.66	4.98	4.74	4.83	5.06	4.71	4.51
F. Other Land	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
G. Other	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
<b>6. Waste</b>	13.87	13.87	14.34	14.34	14.68	15.03	15.33	15.59	15.80	16.00
A. Solid Waste Disposal on Land	13.87	13.87	14.34	14.34	14.68	15.03	15.33	15.59	15.80	16.00
B. Waste-water Handling	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
C. Waste Incineration	4.48	4.50	4.56	5.19	5.57	5.59	5.66	5.91	6.01	5.65
D. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>7. Other (as specified in Summary L4)</b>										
Total N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	1,157.33	1,156.81	1,174.46	1,135.03	1,166.27	1,148.68	1,189.62	1,213.14	1,128.13	1,092.63
Total N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	1,122.21	1,133.35	1,141.80	1,111.74	1,149.27	1,121.61	1,136.97	1,169.08	1,099.42	1,071.92
<b>Memo Items:</b>										
International Bankers	2.23	2.43	2.50	2.59	2.87	2.94	3.00	3.08	3.18	3.17
Aviation	1.22	1.48	1.49	1.50	1.55	1.60	1.63	1.71	1.70	1.81
Marine	1.01	0.95	1.01	1.09	1.32	1.34	1.37	1.37	1.48	1.36
Multilateral Operations	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
<b>CO<sub>2</sub> Emissions From Biomass</b>										

Note: All footnotes for this table are given at the end of the table on sheet 5.

**TABLE 10 EMISSION TRENDS**  
**N<sub>2</sub>O**  
**(Part 3 of 3)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2010		2011		Change from base to latest reported year
	(Gg)		(Gg)		
		%		%	
1. Energy	140.62	131.74	131.74	131.74	-28.05
A. Fuel Combustion (Sectoral Approach)	140.62	131.74	131.74	131.74	-28.05
1. Energy Industries	59.54	57.88	57.88	57.88	143.59
2. Manufacturing Industries and Construction	13.94	13.84	13.84	-0.41	-0.41
3. Transport	60.96	53.92	53.92	60.96	-60.75
4. Other Sectors	3.97	3.96	3.96	3.96	-18.78
5. Other	2.21	2.15	2.15	2.15	-32.96
B. Fugitive Emissions from Fuels	IE:NA:NE	IE:NA:NE	IE:NA:NE	IE:NA:NE	0.00
1. Solid Fuels	IE:NE	IE:NE	IE:NE	IE:NE	0.00
2. Oil and Natural Gas	IE:NA:NE	IE:NA:NE	IE:NA:NE	IE:NA:NE	0.00
2. Industrial Processes	68.22	84.21	84.21	-23.13	0.00
A. Mineral Products	NA	NA	NA	0.00	0.00
B. Chemical Industry	68.22	84.21	84.21	-23.13	0.00
C. Metal Production	NA	NA	NA	0.00	0.00
D. Other Production	NA	NA	NA	0.00	0.00
E. Production of Halocarbons and SF <sub>6</sub>					
F. Consumption of Halocarbons and SF <sub>6</sub>					
G. Other	NA:NO	NA:NO	NA:NO	0.00	0.00
3. Solvent and Other Product Use	14.15	14.15	14.15	-0.38	-0.38
4. Agriculture	846.36	855.63	855.63	9.46	9.46
A. Enteric Fermentation					
B. Manure Management					
C. Rice Cultivation					
D. Agricultural Soils					
E. Prescribed Burning of Savannas					
F. Field Burning of Agricultural Residues					
G. Other					
5. Land Use, Land-Use Change and Forestry	57.29	58.01	58.01	25.25	25.25
A. Forest Land					
B. Cropland	13.45	38.49	38.49	8.47	8.47
C. Grassland	IE:NE	IE:NE	IE:NE	0.00	0.00
D. Wetlands	0.02	0.01	0.01	7.31	7.31

**TABLE 10 EMISSION TRENDS**  
**HFCs, PFCs and SF<sub>6</sub>**  
**(Part 1 of 3)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year (1990)	1990-1999										1998	1999
		(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)		
Emissions of HFCs <sup>20</sup> - (Gg CO <sub>2</sub> equivalent)	36,924.10	33,540.69	38,382.65	39,503.73	45,592.64	64,035.14	73,586.13	84,503.54	101,185.43	99,929.63			
HFC-23	3.13	2.81	3.12	2.85	2.72	2.84	2.69	2.60	3.41	2.64			
HFC-32	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
HFC-41	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO			
HFC-43-10mee	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
HFC-125	IE,NA,NO	IE,NA,NO	IE,NA,NO	0.17	0.35	0.72	1.11	1.54	1.81	2.10			
HFC-134	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
HFC-134a	IE,NA,NO	IE,NA,NO	0.83	3.63	8.78	19.86	26.63	33.51	37.43	42.00			
HFC-152a	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
HFC-143	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	0.07	0.16	0.29	0.44	0.63	0.81	1.04			
HFC-143a	IE,NA,NO	IE,NA,NO	IE,NA,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
HFC-227ea	CIE,NA,NE,NO	IE,NA,NO	0.01	0.01	0.02	0.04	0.04	0.05	0.06	0.08			
HFC-236fa	IE,NA,NO	IE,NA,NO	IE,NA,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
HFC-245fa	IE,NA,NO	IE,NA,NO	IE,NA,NO	658.43	661.37	1,594.51	2,785.64	3,449.74	4,066.32	4,184.66			
Unspecified mix of listed HFCs <sup>20</sup> - (Gg CO <sub>2</sub> equivalent)	331.04	640.05	648.53										
Emissions of PFCs <sup>21</sup> - (Gg CO <sub>2</sub> equivalent)	20,645.87	17,774.74	16,539.87	16,507.74	15,167.42	15,587.02	16,600.19	15,222.69	14,029.04	13,961.47			
CF <sub>4</sub>	2.54	2.16	1.99	1.96	1.75	1.75	1.86	1.47	1.47	1.45			
C <sub>2</sub> F <sub>6</sub>	0.45	0.40	0.39	0.41	0.43	0.45	0.49	0.46	0.49	0.49			
C <sub>3</sub> F <sub>8</sub>	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00			
C <sub>4</sub> F <sub>10</sub>	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
C <sub>2</sub> F <sub>3</sub>	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
C <sub>2</sub> F <sub>4</sub>	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
C <sub>3</sub> F <sub>7</sub>	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO	CIE,NA,NE,NO			
Unspecified mix of listed PFCs <sup>21</sup> - (Gg CO <sub>2</sub> equivalent)	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO			
Emissions of SF <sub>6</sub> <sup>22</sup> - (Gg CO <sub>2</sub> equivalent)	33,452.93	31,446.62	30,902.93	30,902.93	27,952.51	27,952.51	27,902.99	25,449.29	22,449.73	22,884.73			
	1.12	1.21	1.22	1.20	1.17	1.17	1.14	1.04	0.93	0.95			

**Note:** All footnotes for this table are given at the end of the table on sheet 5.

**TABLE 10 HFCs, PFCs (Part 2 of 3)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES									
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)
Emissions of HFCs <sup>a</sup> - (Gg CO <sub>2</sub> equivalent)									
HFC-23	101,117.37	108,117.90	103,719.25	113,176.87	115,002.68	115,974.25	119,973.45	117,451.89	111,949.05
HFC-32	2.47	1.70	1.07	1.49	1.37	1.21	1.48	1.19	0.48
HFC-41	0.03	0.07	0.13	0.34	0.50	0.97	1.49	2.02	2.61
HFC-43+10msec	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
HFC-125	2.32	2.44	2.69	2.86	3.05	3.38	4.30	5.12	6.18
HFC-134	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
HFC-134a	46.41	49.46	52.54	56.62	57.64	57.57	55.52	53.27	51.33
HFC-152a	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
HFC-143	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
HFC-143a	1.23	1.42	1.63	2.06	2.29	2.51	2.72	2.91	3.32
HFC-227ca	0.09	0.09	0.11	0.12	0.12	0.13	0.14	0.14	0.14
HFC-245ca	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
HFC-236fa	4,017.97	4,005.65	4,956.68	5,324.50	5,649.54	5,986.58	6,321.77	6,665.90	7,045.25
Unspecified mix of listed HFCs <sup>a</sup> - (Gg CO <sub>2</sub> equivalent)									
Emissions of PFCs <sup>a</sup> - (Gg CO <sub>2</sub> equivalent)	13,473.80	6,979.60	7,080.60	6,125.08	6,194.63	6,030.44	7,670.73	6,607.08	4,458.52
Pf <sub>4</sub>	1.48	0.67	0.67	0.88	0.56	0.51	0.70	0.37	0.37
C <sub>2</sub> F <sub>6</sub>	0.41	0.27	0.28	0.28	0.26	0.31	0.27	0.33	0.22
C <sub>3</sub> F <sub>8</sub>	0.02	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00
C <sub>4</sub> F <sub>10</sub>	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	C,NA,NE,NO	C,NA,NE,NO	C,NA,NE,NO	C,NA,NE,NO	C,NA,NE,NO	C,NA,NE,NO
C <sub>2</sub> F <sub>4</sub>	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO
C <sub>3</sub> F <sub>6</sub>	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO
C <sub>2</sub> F <sub>2</sub>	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO
C <sub>2</sub> F <sub>3</sub>	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO
C <sub>3</sub> F <sub>4</sub>	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO	IE,NA,NE,NO
Unspecified mix of listed PFCs <sup>a</sup> - (Gg CO <sub>2</sub> equivalent)									
Emissions of SF <sub>6</sub> <sup>a</sup> - (Gg CO <sub>2</sub> equivalent)	18,827.49	18,009.80	16,681.60	15,498.42	14,986.61	13,684.57	12,287.30	11,397.23	9,815.90
SF <sub>6</sub>	79.79	0.75	0.70	0.65	0.63	0.57	0.51	0.48	0.41

**Note:** All footnotes for this table are given at the end of the table on sheet 5.

**TABLE 10 HFCs, PFCs (Part 3 of 3)**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2010 (Gg)	2011 (Gg)	Change from base to latest reported year %
Unspecified mix of listed HFCs <sup>30</sup> - (Gg CO <sub>2</sub> equivalent)	121,275.07	128,951.68	249.23
HFC-23	0.38		-80.05
HFC-32	3.86	4.94	100.00
HFC-41			0.00
HFC-43-10mee			0.00
HFC-125	7.93	9.51	100.00
HFC-134			0.00
HFC-134a	51.40	51.01	100.00
HFC-152a			0.00
HFC-143			0.00
HFC-143a	3.86	4.41	100.00
HFC-227ea			0.00
HFC-236fa	0.15	0.15	100.00
HFC-245ca			0.00
Unspecified mix of listed HFCs <sup>30</sup> - (Gg CO <sub>2</sub> equivalent)	7,419.32	7,807.86	2,238.00
Unspecified mix of listed PFCs <sup>30</sup> - (Gg CO <sub>2</sub> equivalent)	5,946.51	7,017.60	-46.01
C <sub>2</sub> F <sub>4</sub>	0.45	0.61	-75.84
C <sub>2</sub> F <sub>6</sub>	0.32	0.32	-28.64
C <sub>3</sub> F <sub>8</sub>	0.00	0.01	1,295.15
C <sub>4</sub> F <sub>10</sub>			0.00
C <sub>5</sub> F <sub>12</sub>	0.00		100.00
C <sub>6</sub> F <sub>14</sub>			0.00
Unspecified mix of listed PFCs <sup>30</sup> - (Gg CO <sub>2</sub> equivalent)			0.00
Unspecified mix of listed SF <sub>6</sub> <sup>31</sup> - (Gg CO <sub>2</sub> equivalent)	104,070.11	9,379.53	-71,226
	0.72	0.38	-21.25

**Note:** All footnotes for this table are given at the end of the table on sheet 5.

**TABLE 10 EMISSION TRENDS  
SUMMARY  
(Part 1 of 3)**

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)
GREENHOUSE GAS EMISSIONS									
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	4,314,382.25	4,359,557.00	4,380,015.92	4,491,122.69	4,529,295.18	4,784,332.33	4,896,039.61	4,995,333.97	5,137,264.98
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	5,050,693.96	5,050,586.77	5,156,917.29	5,267,905.06	5,354,387.92	5,416,155.70	5,677,606.09	5,715,760.67	5,788,887.01
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF	639,925.78	641,028.36	643,566.42	633,259.72	646,411.15	639,466.70	623,115.10	607,013.82	598,007.25
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF	637,439.98	638,854.76	640,320.57	632,237.91	640,411.10	632,868.13	618,612.76	608,612.76	598,007.25
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	344,333.11	335,089.78	339,188.93	399,980.15	377,621.32	388,740.62	389,332.64	364,153.37	370,120.15
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	362,241.10	350,239.87	355,368.75	396,950.15	371,255.88	384,621.23	397,395.46	363,135.88	361,689.53
HFCs	20,645.87	33,540.69	38,282.65	39,503.73	45,592.64	73,986.13	84,803.54	101,185.43	99,929.53
PFCs	17,774.74	16,539.87	16,357.85	15,587.74	15,167.42	16,600.19	15,222.69	14,029.04	13,961.47
SE <sub>4</sub>	31,252.92	31,446.62	30,902.91	29,400.59	27,959.51	27,202.99	25,449.29	22,449.19	22,804.73
Total (including LULUCF)	5,338,745.64	5,336,243.49	5,469,040.41	5,643,376.51	5,758,849.63	5,948,157.05	6,033,862.86	6,110,563.96	6,251,294.78
Total (excluding LULUCF)	6,169,592.14	6,122,249.75	6,238,875.76	6,456,417.56	6,541,226.73	6,747,540.84	6,810,602.80	6,825,172.96	6,885,279.62

Base year (1990)	1991	1992	1993	1994	1995	1996	1997	1998	1999
CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)
GREENHOUSE GAS SOURCE AND SINK CATEGORIES									
1. Energy	5,267,347.08	5,228,471.08	5,438,924.70	5,523,870.28	5,575,988.21	5,765,836.29	5,888,110.93	5,872,327.30	5,939,695.89
2. Industrial Processes	316,147.45	297,374.07	302,260.37	311,819.03	339,357.00	350,404.17	354,139.01	358,373.87	353,861.72
3. Solvent and Other Product Use	4,404.02	4,281.69	4,037.02	4,587.52	4,587.52	4,587.52	4,587.52	4,879.50	4,879.50
4. Agriculture	413,861.23	422,994.55	430,324.88	447,386.14	459,501.19	468,138.22	462,923.43	446,497.03	447,946.62
5. Land Use, Land-Use Change and Forestry <sup>(a)</sup>	-780,846.50	-786,006.36	-769,835.35	-771,630.98	-812,927.25	-799,383.79	-776,239.94	-714,609.00	-633,984.84
6. Waste	167,832.35	169,218.36	169,747.60	168,754.59	161,732.92	158,574.64	150,494.94	143,095.27	138,995.89
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total (including LULUCF) <sup>(b)</sup>	5,388,745.64	5,336,243.49	5,643,376.51	5,643,376.51	5,758,849.63	5,948,157.05	6,033,862.86	6,110,563.96	6,251,294.78

**TABLE 10 EMISSION TRENDS  
SUMMARY  
(Part 2 of 3)**

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

Base year (1990)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)
GREENHOUSE GAS EMISSIONS										
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	5,259,698.06	5,133,412.32	5,082,859.56	5,002,218.10	5,078,833.02	5,111,507.97	5,071,060.80	5,199,449.19	5,042,208.58	4,635,400.96
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	5,962,701.49	5,962,840.94	5,903,392.84	5,951,512.86	6,070,325.66	6,100,403.13	6,024,114.68	6,119,317.83	5,935,183.73	5,509,601.36
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF	608,926.99	602,027.78	598,326.85	602,392.54	589,604.73	595,614.28	614,783.46	618,779.46	618,779.46	603,777.56
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF	597,493.59	592,298.05	588,153.81	595,836.33	585,867.49	585,614.69	597,073.58	604,268.86	610,114.02	598,076.49
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	338,771.16	358,610.42	364,082.85	351,857.91	361,232.39	356,991.39	368,782.10	376,073.19	349,720.57	338,714.51
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	347,885.07	351,337.85	353,958.68	344,640.75	356,272.68	347,697.61	352,460.59	362,415.56	340,820.96	332,296.71
HFCs	104,964.81	101,117.37	108,117.90	103,719.25	113,176.87	115,002.68	115,974.25	119,973.45	117,451.89	111,949.05
PFCs	13,473.80	6,979.60	7,080.60	6,125.08	6,194.63	6,194.63	6,030.44	7,670.73	6,607.08	4,458.52
SE <sub>4</sub>	18,927.49	18,069.90	17,006.25	16,681.60	15,498.42	14,986.61	13,684.57	12,287.30	11,391.23	9,415.90
Total (including LULUCF)	6,394,662.32	6,220,157.39	6,149,104.47	6,083,980.01	6,164,472.52	6,197,481.56	6,190,315.62	6,333,982.94	6,146,158.81	5,704,016.51
Total (excluding LULUCF)	7,045,546.25	6,935,583.51	6,979,340.50	7,019,471.39	7,147,266.20	7,169,899.54	7,109,338.11	7,225,533.72	7,021,568.90	6,564,980.03

Base year (1990)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)	CO <sub>2</sub> equivalent (Gg)
GREENHOUSE GAS SOURCE AND SINK CATEGORIES										
1. Energy	6,119,611.96	6,036,684.09	6,066,626.69	6,118,942.18	6,227,873.36	6,251,617.44	6,178,349.41	6,266,903.09	6,096,242.58	5,699,176.63
2. Industrial Processes	332,433.19	318,640.90	327,850.26	315,830.55	327,129.19	330,765.41	335,697.57	347,331.31	318,710.08	265,119.84
3. Solvent and Other Product Use	4,879.50	4,879.50	4,879.50	4,879.50	4,879.50	4,879.50	4,879.50	4,879.50	4,879.50	4,879.50
4. Agriculture	432,176.83	443,651.11	447,879.18	447,108.05	453,308.70	446,188.00	454,620.11	470,900.79	463,583.76	459,190.57
5. Land Use, Land-Use Change and Forestry <sup>(a)</sup>	-650,683.94	-715,426.33	-820,246.03	-915,521.38	-982,792.68	-972,467.78	-919,023.50	-891,950.78	-975,410.10	-862,410.51
6. Waste	136,244.78	131,728.00	132,598.22	135,203.47	134,567.80	136,941.34	136,283.88	136,511.38	138,645.34	138,123.85
7. Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total (including LULUCF) <sup>(b)</sup>	6,394,662.32	6,220,157.39	6,149,104.47	6,083,980.01	6,164,472.52	6,197,481.56	6,190,315.62	6,333,982.94	6,146,158.81	5,704,016.51

<sup>(a)</sup> The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

<sup>(b)</sup> Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

<sup>(c)</sup> Enter actual emissions estimates. If only potential emissions estimates are available, these should be reported in this table and an indication for this be provided in the documentation box. Only in these rows are the emissions expressed as CO<sub>2</sub> equivalent emissions.

<sup>(d)</sup> In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is Gg of CO<sub>2</sub> equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

<sup>(e)</sup> Includes net CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O from LULUCF.

TABLE 10 EMISSION TRENDS  
SUMMARY  
(Part 3 of 3)

Inventory 2011  
Submission 2013 v1.1  
UNITED STATES OF AMERICA

GREENHOUSE GAS EMISSIONS	2010	2011	Change from base to latest reported year (%)
CO <sub>2</sub> emissions including net CO <sub>2</sub> from LULUCF	4,847,628.12	4,707,813.53	9.12
CO <sub>2</sub> emissions excluding net CO <sub>2</sub> from LULUCF	5,727,038.60	5,603,820.59	9.86
CH <sub>4</sub> emissions including CH <sub>4</sub> from LULUCF	592,710.43	587,235.17	-8.23
CH <sub>4</sub> emissions excluding CH <sub>4</sub> from LULUCF	588,041.55	573,063.23	-10.10
N <sub>2</sub> O emissions including N <sub>2</sub> O from LULUCF	343,917.52	356,886.09	3.65
N <sub>2</sub> O emissions excluding N <sub>2</sub> O from LULUCF	338,270.27	343,468.24	0.65
HFCs	121,275.07	128,951.68	249.23
PFCs	5,946.51	7,017.60	-66.01
SF <sub>6</sub>	10,070.11	9,379.53	-71.26
<b>Total (including LULUCF)</b>	<b>5,921,547.77</b>	<b>5,797,284.50</b>	<b>-7.58</b>
<b>Total (excluding LULUCF)</b>	<b>6,790,642.12</b>	<b>6,665,700.87</b>	<b>-8.04</b>

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2010	2011	Change from base to latest reported year (%)
1. Energy	5,889,117.78	5,745,698.03	9.08
2. Industrial Processes	303,439.65	326,461.50	3.26
3. Solvent and Other Product Use	4,387.15	4,387.15	-0.38
4. Agriculture	462,269.97	461,496.95	11.51
5. Land Use, Land-Use Change and Forestry <sup>(a)</sup>	-869,094.35	-868,416.37	11.21
6. Waste	131,427.57	127,657.44	-23.94
7. Other	NA	NA	0.00
<b>Total (including LULUCF)<sup>(b)</sup></b>	<b>5,921,547.77</b>	<b>5,797,284.50</b>	<b>-7.58</b>

<sup>(a)</sup> The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

<sup>(b)</sup> Fill in net emissions/removals as reported in table Summary I.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

<sup>(c)</sup> Enter actual emissions estimates. If only potential emissions estimates are available, these should be reported in this table and an indication for this be provided in the documentation box. Only in these rows are the emissions expressed as CO<sub>2</sub> equivalent emissions.

**SUMMARY 2 SUMMARY REPORT FOR CO<sub>2</sub> EQUIVALENT EMISSIONS**  
**(Sheet 1 of 1)**

Inventory 2011

Submission 2013 v1.1

UNITED STATES OF AMERICA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(1)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs <sup>(2)</sup>	PFCs <sup>(2)</sup>	SF <sub>6</sub> <sup>(2)</sup>	Total
	CO <sub>2</sub> equivalent (Gg)						
<b>Total (Net Emissions) <sup>(1)</sup></b>	<b>4,707,813.53</b>	<b>587,235.17</b>	<b>356,886.99</b>	<b>128,951.68</b>	<b>7,017.60</b>	<b>9,379.53</b>	<b>5,797,284.50</b>
<b>1. Energy</b>	<b>5,452,528.41</b>	<b>252,331.28</b>	<b>40,838.34</b>				<b>5,745,698.03</b>
A. Fuel Combustion (Sectoral Approach)	5,419,837.29	8,023.01	40,838.34				5,468,698.64
1. Energy Industries	2,158,510.32	446.03	17,941.39				2,176,897.73
2. Manufacturing Industries and Construction	773,192.26	1,655.48	4,289.45				779,137.19
3. Transport	1,725,577.55	1,391.54	16,714.47				1,743,683.56
4. Other Sectors	550,857.14	4,455.93	1,227.07				556,540.15
5. Other	211,700.02	74.03	665.96				212,440.01
B. Fugitive Emissions from Fuels	32,691.12	244,308.27	IE,NA,NE				276,999.40
1. Solid Fuels	IE,NE,NO	68,086.52	IE,NE				68,086.52
2. Oil and Natural Gas	32,691.12	176,221.76	IE,NA,NE				208,912.88
<b>2. Industrial Processes</b>	<b>151,292.18</b>	<b>3,716.20</b>	<b>26,104.11</b>	<b>128,951.68</b>	<b>7,017.60</b>	<b>9,379.53</b>	<b>326,461.30</b>
A. Mineral Products	58,590.21	NA	NA				58,590.21
B. Chemical Industry	21,664.69	3,126.59	26,104.11	NA	NA	NA	50,895.39
C. Metal Production	71,037.27	589.61	NA	NA	2,942.43	1,407.30	75,976.62
D. Other Production	NE						NE
E. Production of Halocarbons and SF <sub>6</sub>				6,934.00	NA,NE	NA,NE	6,934.00
F. Consumption of Halocarbons and SF <sub>6</sub> <sup>(2)</sup>				122,017.68	4,075.17	7,972.23	134,065.08
G. Other	NA,NO	NA,NO	NA,NO	NA	NA	NA	NA,NO
<b>3. Solvent and Other Product Use</b>	<b>NA,NE</b>		<b>4,387.15</b>				<b>4,387.15</b>
<b>4. Agriculture</b>		<b>196,251.27</b>	<b>265,245.68</b>				<b>461,496.95</b>
A. Enteric Fermentation		137,373.39					137,373.39
B. Manure Management		52,038.31	17,984.12				70,022.43
C. Rice Cultivation		6,635.07					6,635.07
D. Agricultural Soils <sup>(3)</sup>		NA	247,173.95				247,173.95
E. Prescribed Burning of Savannas		NA	NA				NA
F. Field Burning of Agricultural Residues		204.50	87.61				292.11
G. Other		NA	NA				NA
<b>5. Land Use, Land-Use Change and Forestry <sup>(1)</sup></b>	<b>-896,007.06</b>	<b>14,171.94</b>	<b>13,418.75</b>				<b>-868,416.37</b>
A. Forest Land	-761,804.08	14,171.94	11,931.26				-735,700.88
B. Cropland	19,765.20	NA	IE,NE				19,765.20
C. Grassland	-1,354.10	NA	IE,NE				-1,354.10
D. Wetlands	917.70	NE	4.48				922.18
E. Settlements	-68,825.50	NE	1,483.01				-67,342.49
F. Other Land	NE	NE	NE				NE
G. Other	-84,706.28	NA,NO	IE,NA,NO				-84,706.28
<b>6. Waste</b>	<b>IE,NA,NE</b>	<b>120,764.47</b>	<b>6,892.97</b>				<b>127,657.44</b>
A. Solid Waste Disposal on Land	NA,NE	103,046.71					103,046.71
B. Waste-water Handling		16,168.08	5,177.24				21,345.32
C. Waste Incineration	IE	IE,NE	IE				IE,NE
D. Other	NA	1,549.69	1,715.73				3,265.42
<b>7. Other (as specified in Summary 1.A)</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>Memo Items: <sup>(4)</sup></b>							
<b>International Bunkers</b>	111,315.70	97.41	928.16				112,341.26
Aviation	64,856.50	NA	562.98				65,419.48
Marine	46,459.20	97.41	365.18				46,921.78
<b>Multilateral Operations</b>	<b>IE</b>	<b>IE</b>	<b>IE</b>				<b>IE</b>
<b>CO<sub>2</sub> Emissions from Biomass</b>	<b>264,527.22</b>						<b>264,527.22</b>
Total CO <sub>2</sub> Equivalent Emissions without Land Use, Land-Use Change and Forestry							6,665,700.87
Total CO <sub>2</sub> Equivalent Emissions with Land Use, Land-Use Change and Forestry							5,797,284.50

<sup>(1)</sup> For CO<sub>2</sub> from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

<sup>(2)</sup> Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

<sup>(3)</sup> Parties which previously reported CO<sub>2</sub> from soils in the Agriculture sector should note this in the NIR.

<sup>(4)</sup> See footnote 8 to table Summary 1.A.

## B

Appendix B:  
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